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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/520,735

01/10/2005

Paulina Theodora Gerarda Donders

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EXAMINER

ALLISON, ANDRAE S

ART UNIT

PAPER NUMBER

2624

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/520,735	Applicant(s) DONDERS, PAULINA THEODORA GERARDA	
	Examiner Andrae S. Allison	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01/10/2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-25 is/are rejected.
- 7) ☒ Claim(s) 8-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/10/2005</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the bundle of banknotes, the image processing module, the optical sensor must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the method for determine authenticity, counting or determining fitness as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

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#### Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

3. The disclosure is objected to because of the following informalities: The phrase "the following parameter, viz. the authenticity" should read "the following parameter, the authenticity" because "viz." should be deleted.

Appropriate correction is required.

***Claim Objections***

4. Claims 10 and 13-18 are objected to because of the following informalities: The phrase "the following parameter, viz. the authenticity" should read "the following parameter, the authenticity" because "viz." should be deleted.

Claim 13-18 are objected as incorporating the deficiencies of claim 10 upon which each claim depend.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 7 recites the limitation "the so called second derivative" in claim 7, lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-7, 10-12, 14-17 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed (EP 0743616 A2) in view of Goldenberg et al (US Patent No.: 5,534,690).

As to independent claim 1, Reed discloses a method of analyzing a bundle of banknotes (method for counting sheets; column 1, lines 5-6), which method comprises the steps of providing a bundle of banknotes, which bundle comprises at least one surface defined by the edges of banknotes (see 10 of Fig 2, where a sheet pack is defined by edges), illuminating the surface of said bundle (see column 6; lines 10-15, where the stack is illuminated), providing a two-dimensional image of the bundle by making use of an optical sensor (see column 13, lines 13-36, where a 2D image is obtained by a CCD sensor), and providing an output signal that represents the result of the analysis (see column 7, line 59 and column 8, line 1-2), wherein the providing of the two-dimensional image is carried out in such a manner that the image is enlarged in the y-direction, which y-direction is defined as the height of the bundle of banknotes (see column 6, lines 37-59, where length of the waveform can be increased in height). However, Reed does not expressly disclose bundle of banknotes. Goldenberg discloses a method for counting thinly stacked object such as stacks of banknotes (see Fig 3). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have combined the teaching of Reed and Goldenberg for rapidly, accurately and inexpensively counting stack of objects by image the stack of objects and carrying image processing (see abstract)

As to independent claim 19, this claim differs from claim 1 only in that claim 19 is a system claim whereas, claim 1 is method and the limitations a light source, at least one optical sensor and an image processing unit are additively recited. Reid and

Goldenberg disclose a system (see Fig 1) comprising: a light source (26, see Fig 1), at least one optical sensor (20, see Fig 1) and an image processing unit (34, see Fig 1).

As to claim 2, Reed discloses the method, wherein the image is reduced in the x-direction, which x-direction is defined as the width of the bundle of banknotes (see Fig 2).

As to claim 3, Reed discloses the method wherein the step of providing the two-dimensional image of the bundle and obtaining an output signal comprises the step of carrying out an image processing operation, using a pixel matrix (see column 7, lines 1-19, where the signal is processed by a DSP after A/D conversion).

As to claim 4, Reed discloses the method, wherein the step of carrying out an image processing operation comprises the provision of a pixel matrix in which the number of pixels in the y-direction is larger than the number of pixels in the x-direction (see column 6, lines 33-55).

As to claim 5-6, Reed does not expressly disclose the method wherein the number of pixels in the y-direction is at least 3 times larger than the number of pixels in the x-direction and the number of pixels in the y-direction is preferably at least 5 times larger than the number of pixels in the x-direction. However, it would have been obvious to have the number of pixels in the y-direction is at least 3 times larger than the number



of pixels in the x-direction and the number of pixels in the y-direction is preferably at least 5 times larger than the number of pixels in the x-direction depending on the height of the bundle. Applicant has not disclosed that 3 times larger than the number of pixels in the x-direction or 5 times larger than the number of pixels in the x-direction provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with 2 or 4 times larger as long as the length of the pixels in the y direction is as high or higher than the height of the bundle (OFFICIAL NOTICE).

As to claim 7, Reed teaches the method, wherein the step of carrying out the image processing operation comprises the steps of awarding a value corresponding to the optical density to a pixel (gray values ranging from 0-255, column 7, lines 14-17) , determining a threshold value of the optical density (level of reflectivity, column 7, lines 24-26), awarding a priority to a pixel having an optical density value higher than the threshold value while determining the so-called second derivative of the density profile of the surrounding pixels, determining an average value of the density for a row of pixels in the y-direction, which row comprises one or more pixels having a priority, determining the spread and the standard deviation of the average value thus determined, and providing an output signal which is the summation of the number of average values higher than the threshold value (see column 11, lines 1-12, where the standard deviation is determine by the average calculation).

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As to claim 10, Reed teaches the method wherein the analysis comprises the determination of one or more of the following parameters, viz. the authenticity, the number of banknotes, the value and the fitness of the bundle of banknotes (sheet pack counting, column 12, lines 52-57).

As to claim 11, Reed does not expressly disclose the method wherein said irradiation with UV light is carried out on one side of a bundle of banknotes. However, it would have been obvious to irradiate the bundle with UV light to determine the authenticity of the bundle. Furthermore, using UV light to determine authenticity is well known in the art (OFFICIAL NOTICE).

As to claim 12, Reed teaches the method wherein said irradiation with infrared light is carried out on one side of a bundle of banknotes (see column 6, lines 1-2).

As to claim 14, Reed teaches the method wherein an image of one side of the bundle of banknotes is obtained by making use of a high-resolution camera as an optical sensor, which image is processed, using a suitable data processing unit, for the purpose of determining the number of banknotes in a bundle (sheet pack counting, column 12, lines 52-57).

As to claim 15, Reed teaches the method wherein said determination of the number of banknotes in a bundle of banknotes is carried out by irradiating one side of

the bundle with far infrared light at a number of angles of incidence and carrying out a time measurement on the reflected radiation (see column 5, lines 43-58 and column 6, lines 1-10).

As to claim 16, Reed teaches the method wherein an image of one side of the bundle of banknotes is obtained by making use of a high-resolution camera as an optical sensor, which image is processed, using a suitable data processing unit, for the purpose of determining the value of the bundle of banknotes (note that during counting the value of the stack is determined, see column 12, lines 53-57).

As to claim 17, Reed teaches the method, wherein the fitness of a bundle of banknotes is determined by measuring the compressibility of a bundle of banknotes (see column 5, lines 27-46).

Claim 20 differ from claim 2 only in that claim 2 is a method claim whereas, claim 20 is an device claim. Thus, claim 20 is analyzed as previously discussed with respect to claim 2 above.

As to claim 21, note the discussion above, Goldenberg teaches the device for analyzing a bundle of banknotes wherein the optical sensor comprises a number of individual optical sensors, which optical sensors each receive a segment of the illuminated bundle of banknotes, wherein use is made of a mirror construction (see

column 5, line 35).

As to claim 22, neither Reed or Goldenberg the device for analyzing a bundle of banknotes, wherein said mirror construction is made up of a number of submirrors, in particular a semi-transparent mirror. However, it would have obvious to analyze a bundle of banknotes, wherein said mirror construction is made up of a number of submirrors, in particular a semi-transparent mirror so that the light reflected of the banknote can be bent by the mirrors thus directed the bent light to the optical sensor (OFFICIAL NOTICE)

As to claim 23, Reed teaches the device for analyzing a bundle of banknotes wherein said sensors are individually movable in x-, y- and z-directions (see Fig 2).

As to claim 24, Reed teaches the device for analyzing a bundle of banknotes wherein said optical sensor is a scanning camera, which scanning camera makes a scan of the bundle of banknotes in the x-direction (see column 5, lines 52-56).

As to claim 25, neither Reed or Goldenberg teach device for analyzing a bundle of banknotes wherein the device furthermore comprises a cutting element, which removes an amount of material from a bundle of banknotes in a plane perpendicular to the z-direction, which cut surface is used as the surface in the illuminating step. However it would have been obvious to include a cutting element in the apparatus of

Reed, which removes an amount of material from a bundle of banknotes in a plane perpendicular to the z-direction, which cut surface is used as the surface in the illuminating step so that excess banknotes or sheets would be removed from the bundle before the stack or bundle is counted (OFFICIAL NOTICE).

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reed (EP 0743616 A2) in view of Goldenberg et al (US Patent No.: 5,534,690) further in view of Jou et al (Pub. No.: US 2004/01213448).

As to claim 13, neither Reed teaches method wherein an image of one side of the bundle of banknotes is obtained by making use of a high-resolution camera as an optical sensor, which image is processed, using a suitable data processing unit (see column 5, lines 46-56), however does not teach imaging one side for the purpose of determining the authenticity of the bundle. Jou teach a method for recognizes counterfeit (column [p][002], lines 11-3) for imaging one side for the purpose of determining the authenticity of the bundle (see [p][009]). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have combined the teaching of Reed and Goldenberg with Jou to capture an image of a banknote using an optical sensor such as CCD sensor ([p][0018] lines 7-11) to determine the authenticity of the banknote ([p][008])

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reed (EP 0743616 A2) in view of Goldenberg et al (US Patent No.: 5,534,690) further in view

of Kayani (US Patent No.: 5,986,457).

As to claim 18, neither Reed or Goldenberg the device wherein the fitness of a bundle of banknotes is determined by measuring the acoustic resistance of a bundle of banknotes. Kayani discloses an apparatus for measuring currency limpness (column 1, line 10-12) wherein the fitness of a bundle of banknotes is determined by measuring the acoustic resistance of a bundle of banknotes (see column 3, lines 18-27). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have combined the teaching of Reed as modified by Goldenberg with Kayani to subject a note to acoustic wave to determine the limpness of the note (column 3, line 18-27) thus the issuing authority will decide whether to keep or remove the note from circulation (column 1, lines 62-67).

***Allowable Subject Matter***

1. Claims 8-9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

The prior art made part of the record and not relied upon is considered pertinent to applicant's disclosure.

Woodward (US Patent No.: 5,040,196) is cited to teach a stack counting instrument.

Dorman et al (US Patent No.: 4,694,474) is cited to teach a high speed counter for thin objects.

Graves et al (US Patent No.: 7,103,206) is cited to teach a method an apparatus for detecting doubled bills in a currency-handling device.

Leuthold (US Patent No.: 6,182,962) is cited to teach a device for separating sheet article from a stack.

Takarada et al (US Patent No.: 5,324,291) is cited to teach a sheet counting machine.

### ***Inquires***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrae S. Allison whose telephone number is (571) 270-1052. The examiner can normally be reached on Monday-Friday, 8:00 am - 5:00 +- pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrae Allison

August 15, 2007

AA-



SAMIR AHMED  
PRIMARY EXAMINER